

## **REMARKS**

### **I. Summary of Claim Amendments**

By this Amendment, claims 1-20 have been cancelled and replaced with new claims 21-38. Claims 21-30 are apparatus claims, while claims 31-38 are method claims. Many of these claims correspond to the cancelled claims. The various rejections of the cancelled claims under 35 U.S.C. 112, second paragraph, for lack of antecedent basis have been noted and corrected in the new claims.

Claim 21 recites a combination in line plastic spiral coil forming and binding machine in which a transfer mechanism is provided for transferring segments of heated binding coils from a coil forming machine to a binding machine. The key limitations are that the transfer mechanism is specifically selected to provide slow cooling of the coil segments and a sufficient duration of time between when the coils segments are cut and they arrive at the binding machine to provide adequate cooling of a range of sizes and gauges of binding coil segments for proper processing by the binding machine. The phrase “transfer mechanism” is a generic phrase used to define any device, such as the disclosed linkage cooling conveyor of the preferred embodiment, that serves to transfer the coils form the forming machine to the binding machine.

Claim 31 is a method claim that recites the steps of the process carried out by the invention. Again, the same key limitations regarding slow cooling and its duration that are in claim 21 are also recited in claim 31.

The various dependent claims for the most part correspond to the cancelled dependent claims and specify the various elements of the preferred embodiment, including the linkage cooling conveyor and its intermittent operation, for example. In addition, claim 30 specifies that the forming and binding machines are independent of one another which is clearly apparent from

FIG. 22 and the description associated therewith. This claim is being added to further distinguish the invention over the integral devices of the prior art discussed in greater detail herein.

As will be established in detail herein, each of the independent claims, 21 and 30, as well as all of the dependent claims, are clearly patentable over the prior art now of record.

## **II. Terminal Disclaimers**

Attached hereto are two Terminal Disclaimers Under 37 C.F.R. 1.321(c), one for each of the patents that have issued from the parent applications, US Patent Nos. 6,547,502 and 6,726,426 (hereinafter the '502 patent and the '426 patent). These disclaimers overcome the two obviousness type double patenting rejections set forth in numbered paragraphs 7 and 8 of the Office Action.

## **III. Copending Litigation and Related References and Documents Cited Herein**

For the record, the '502 and the '426 patents are the subject of a copending patent infringement action brought by the assignee of the patents and the subject application, Spiel Associates, Inc. against Gateway Bookbinding Systems, Ltd (Spiel Associates, Inc. v. Gateway Bookbinding Systems, Ltd., Case No. CV-03 4696, United States District Court, Eastern District of New York). An Information Disclosure Statement is also submitted herewith to cite additional prior art references that have been brought to Applicant's attention during the course of the litigation. In addition, the IDS lists and includes copies of the following: excerpts from deposition transcripts and other documents from the litigation, which are discussed in Section VI herein; a Protest allegedly filed by Gateway on June 21, 2005, but not entered in the subject application; a Second Supplemental Protest filed in corresponding Canadian Patent Application No. 2,321,937; and an Amendment filed in the aforementioned Canadian patent application. For

the record and pursuant to the provisions of 37 C.F.R. 1.291(b)(1), Applicant hereby consents to consideration by the Examiner of the Protest filed June 21, 2005.

**IV. The Evidence Will Establish that the Claims are Clearly Patentable Over the Prior Art of Record**

As has already been established during the prosecution of the parent applications, no prior art has been located to date which discloses or suggests the combination of elements that form the essence of the present invention. Furthermore, Requests for Reexamination (Control Nos. 90/007,101 and 90/007,081) were filed in June 2004 for both patents that issued from the parent applications, US Patent Nos. 6,547,502 and 6,726,426. These Requests were filed so that prior art previously asserted by Gateway in another Protest filed in a corresponding Canadian patent application could be considered. The new prior art submitted in the Requests was not even as relevant as what had already been considered by the Examiner during prosecution of the parent applications. As a result, both Requests were summarily denied by the USPTO as not even raising substantial new issues of patentability as to any of the claims in the issued patents.

Applicant admits that plastic coil forming machines are known, as are binding machines. Further, different types of cooling conveyors have been used in the past for other types of applications, though not specifically for plastic coil forming and binding machines. However, the only known combination machine prior to Applicant's invention for forming plastic coils and then binding the same in a book is the device disclosed in US Patent No. 4,249,278 to Pfaffle (hereinafter, Pfaffle '278). That device, however, is known to be problematic during operation as the evidence uncovered during the discovery phase of the aforementioned litigation clearly has established. The fact of the matter is that Applicant's solution to the problem presented by the Pfaffle machine, which continued for approximately 20 years unsolved, represents the only workable combination forming and binding machine design in use today. Not only is the design

employed by Spiel and Associates, but Gateway uses the same design and Spiel contends that their use constitutes infringement of the Spiel patents. While the machine combines known elements together, there has been no suggestion in the prior art to combine these elements before and the synergy of their combination provides a machine, which unlike the Pfaffle machine, actually works without any problems.

#### **V. The Prior Art Rejections Set Forth in the Office Action are Overcome**

In addition to the double patenting rejections, there are 3 prior art rejections of the claims set forth in the Office Action, each of which is overcome in view of the following discussion. Claims 2 and 4-8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Pfaffle '278. Claim 1 stands rejected under 35 U.S.C. 103 as being unpatentable over Negro (US 3,688,809) in view of the EMI literature reference (note there appears to be an error in the Office Action: only Negro is specifically referenced in the rejection, however, from the text that follows it is apparent that the rejection is actually over Negro in view of EMI). Finally, claims 3, 10-12 and 15-17 stand rejected under 35 U.S.C. 103 as being unpatentable over Pfaffle '278 in view of EMI.

With reference to the rejection of claims 2 and 4-8 as being anticipated by Pfaffle '278, this rejection is rendered moot by the cancellation of claim 2 and the presentation of new independent claims 21 and 30, both of which recite use of a transfer mechanism that expose the plastic coils to **slow** cooling for a sufficient duration of time that they can be properly processed in the binding machine. As has been discussed during the prosecution of the parent applications and as evidenced during discovery in the pending litigation, Pfaffle '278 discloses the use of rapid vortex forced air cooling which has been found in practice not to cool the coils properly, which thereby makes them unsuitable for insertion in the binding machine. Thus, Pfaffle '278

does not anticipate the claims under 35 U.S.C. 102 because it does not disclose slow cooling of the coils. Further, Pfaffle is silent on the issue of insuring that the time duration of cooling the coils is sufficient to insure that a range of coil diameters and gauges can be properly processed in the binding machine.

The rejection over Negro in view of EMI is rendered moot in view of the cancellation of claim 1. New independent claim 21 recites both heating and cooling a plastic coil. Negro is clearly silent on the issue of heating or cooling. Thus, this rejection is clearly not applicable to the new claims.

Finally, the rejection of claims 3, 10-12 and 15-17 under 35 U.S.C. 103 as being unpatentable over Pfaffle '278 in view of EMI is clearly in error, as it relies on the impermissible use of hindsight through reference to Applicant's own disclosure. In addition, Pfaffle's disclosure actually teaches away from the suggested combination. In particular the assertion in the Office Action that it would be obvious to substitute a cooling conveyor for the EMI brochure is without merit and would destroy the Pfaffle machine in the process. Pfaffle's machine is specifically designed to be an integral compact device in which coil heating forming, cooling, cutting and binding all occurs on the same mandrel, presumably to simplify the design of the machine. There is no way one of the EMI conveyors could be employed in the Pfaffle machine without breaking the machine up into pieces, which would obviously defeat the purpose of the design. Further, there clearly is no suggestion in Pfaffle that one could use slow cooling for it is quite apparent that the compact design of the machine clearly requires rapid cooling of the coils if there is any hope for them being cool enough to be processed by the binding portion of the machine. For these reasons, the rejection over Pfaffle in view of EMI is overcome. In addition,

claim 30 further specifies that the forming and binding machines are independent of one another which further defines the invention over Pfaffle '278.

## **VI. The Gateway Protest**

The Protest filed by Gateway in the subject application was not entered, presumably because it was not timely filed prior to publication of the subject application and Gateway did not obtain written consent from Applicant to file the same pursuant to 37 C.F.R. 1.291(b)(1). Considering most of the additional references cited by Gateway in the Protest have now been cited by the Examiner, it is assumed that the Protest was considered at least to some extent. Regardless, Applicant now formally submits the Gateway Protest and consents to full consideration of the issues therein by the Examiner. The remaining references in the Protest that have not already been considered are hereby listed in the attached Forms PTO/SB/08A and 08B (note that although the Negro patent has obviously been considered, it is nevertheless listed because it was not listed by the Examiner on the PTO-892 form which accompanied the Office Action). What follows are responses to the specific issues set forth in the Protest to the extent they differ from the prior art issues already considered previously.

### **A. THERE ARE NO MISLEADING STATEMENTS IN THE APPLICATION**

#### **1. Brittleness**

Gateway argues that the comments in the subject application regarding deficiencies of the prior art constitute “misleading statements” that allegedly form the sole basis for the issued Spiel patents. Specifically, Gateway argues that Spiel’s comments regarding the possibility of the prior art Pfaffle device producing brittle coil is incorrect, allegedly leaving Spiel with no patentable subject matter. This is simply untrue.

The claims in the '502 and '426 patents use the language "*solid, non-brittle state*" – something not pointed out by the Protestor. This language represents two separate and distinct conditions of the coil - "solid" means that the coil must be cool enough for binding (i.e. not in a spongy state). "Non-brittle" means that the coil must not be so cool as to crack under stress. The coil needs to be able to accept a crimp (bend) without "wandering back" to its original shape (such as if it is too hot) and without cracking (such as if its is too cold). This was specifically brought to the USPTO's attention by Spiel in its Requests for Reexamination of both the '502 and '426 patents, both of which were decided in Spiel's favor. Specifically, the Requests for Reexamination stated the following:

"The Spiel invention solves a problem that could occur with prior art systems such as disclosed in U.S. Patent No. 4,249,278 to Pfaffle which utilize rapid cooling of the coils after they are formed. In Pfaffle, a vortex tube supplies cooling air to a chamber that is used to rapidly cool the coils as they exit the forming machine. Norton Spiel, the patentee in the '426 patent, discovered through actual experience that use of Pfaffle's vortex cooling arrangement was often times problematic. In particular, Pfaffle's cooling device was hard to control such that the coils would either not be cooled enough, thereby leaving them in a malleable, non-solid state in which the coils would be deformed by the binding machine, or they would be cooled too much below room temperature to the point that they could become brittle. Trying to strike a balance between these two extremes was found to be quite difficult.

After consideration of the problem, Mr. Spiel concluded that the rapid cooling was causing the brittleness of the thin coils if they remained in the cooler too long because of air bubbles that tended to form in the plastic if it was cooled too much. Through experimentation, Mr. Spiel discovered that if ambient air cooling was employed in place of vortex or chilled air cooling, that the aforementioned brittleness cannot occur. In addition, by exposing the coils to the ambient temperature cooling air for a sufficiently long period of time, cooling of the coils down to about room temperature would be assured, thereby leaving the coils in a solid, non-malleable state. With this in mind, patentee devised the subject invention in which a carrying means, such as a conveyor, is employed to carry the coils in ambient air conditions at a speed that is selected to insure that the coils are cooled down to close to room temperature prior to be fed into the binding machine."

Importantly regarding the alleged misleading statements, Inventor Norton Spiel has explained that his opinions regarding the then twenty-year-old Pfaffle machine were based on

direct accounts provided by highly-respected members of the bookbinding machinery community. For example, Mr. Spiel stated the following at deposition:

“Q. And what did Mr. Bramon tell you his experiences had been?

A. That brittleness can occur on certain circumstances when plastic coil is not handled properly, either cooled too quickly or things of that nature. The other fellow, the salesman for, who sold the machine by Pfaffle, which was consequently dropped as an item, told me that that's were the problems that they were experiencing, that all their customers were experiencing.”

In addition, although Gateway quoted Spiel Associates' President Saul Spiel's deposition several times in its Protest regarding the Pfaffle machine and possible brittleness problems, Gateway failed to include many other relevant statements, including the following:

“I spoke to a man that used to work for Sickinger and asked him in greater detail what were the pros and cons of the machine and how it functioned and what sort of obstacles they came across and why they discontinued it.”

This yielded additional information regarding the Pfaffle device, which was sold in the U.S. by the Sickinger company. It is now widely known that the Sickinger / Pfaffle product was a commercial failure and was discontinued. Lonnie Bramon of PVC Spiral Supply, Inc. (a non-party witness in the litigation) stated: “I saw them attempt to operate it, but they never were successful to get it to work properly because they were unable to cool it properly.” (Bramon Depo., P. 221, L. 2-13). Furthermore, Pierre Primeau, who actually owns two of the Pfaffle machines, described the problems as follows:

“A. The machine was taking a filament and forming it, as I described it, for the metallic coil, which is to take a filament and try to form it as it goes along inside the book. There was many quality problems with that. The end product was not as good as it could be on the other process that we have. The coil will not have the perfect shape. The crimping was not right.” (Primeau Depo. P. 63, L. 22 to P. 64, L. 6)

Contrary to Pfaffle's device, Spiel's machine uses *time and ambient air* to slowly and gradually cool the heated plastic coil for proper binding. This is because plastic is a poor



conductor of heat and releases energy slowly. The Spiel method is less complex, less costly, and considerably more reliable, which has led to its success.

Finally, it is important to note that inventor Norton Spiel still feels that brittleness can result from over-cooling of coils, per the following testimony at his recent deposition:

“Q. But it is your opinion that bubbles or voids can be created in plastic coil during plastic coil formation.

A. Yes.”

Per all of the above, there was clearly no intent by Spiel to deceive the Examiner. Importantly, intent is an independent element of inequitable conduct in patent prosecution and must be separately established. *Allied Colloids, Inc. v. American Cyanamid Co.*, 64 F.3d 1570, 1578, 35 USPQ2d 1840, 1845 (Fed Cir 1995). Moreover, “given the ease with which a relatively routine act of patent prosecution can be portrayed as intended to mislead or deceive, ***clear and convincing evidence of conduct sufficient to support an inference of culpable intent is required.***” *Northern Telecom*, 908F.2d at 908, 15 USPQ2d at 1327.

## **2. Cooling On The Conveyor**

Protestor Gateway offers the conclusory and self-serving statement that the Spiel patent’s discussion of cooling on the conveyor was “entirely meaningless.” This is disingenuous and factually incorrect.

It is well known that cooling of the coils is necessary for effective binding. As admitted by Gateway in the litigation, plastic coil typically exits the forming at an exterior temperature of 104 degrees F. The interior of the coil is significantly hotter. Still, a reduction from 104 to 72 (close to room temperature) is not just a “few degrees” as alleged by the Protestor – it is *very* significant, especially in this context. For example, the Pfaffle ‘278 patent (filed in 1978) teaches the usage of the expensive “Vortex” cooling system to blast cold air on the coils following

forming. Obviously, the artificial cooling system is incorporated into the design because cooling is required before binding.

As stated by Norton Spiel, the inventor and assignor of the Spiel patents:

“The primary motive for this was not only that but basically to allow time to cool. because I knew putting in hot coil is a devil of a problem.” (Norton Spiel Depo. P. 102, L.11-14)

In fact, as noted in the specification of the ‘502 patent (Col. 1, lines 66-67), the issue is not only whether the coil is cool enough to be handled and manually inserted in a book, but whether it is cool enough to (1) be manipulated by fast-spinning rubber wheels; and (2) be inserted, cut, and crimped (bent at both ends) in a manner that will last during usage. This is known by the entire bookbinding industry. For instance, Lonnie Bramon, co-founder of bookbinding machinery manufacturer PVC Spiral Supply, Inc., discussed the significance of the above as follows:

“Yeah, you may have some problems because the coil is no longer -- it's not quite rigid and stiff yet; therefore the driveability may be impaired. Softness may not allow the coil to have the rigidity to drive it through properly, and then when the book is crimped if the material is still warm inside, then the crimp, which is the tuck at the end of the book, would have a tendency to relax.” (Bramon Depo P.177, L.17-24).<sup>1</sup>

Furthermore, Pierre Primeau is the owner of “Reliure Alternative” in Quebec City - a large bookbindery in Canada. He is also General Manager of “Spiraplast,” a manufacturer of spiral coils. Because he is both a coil manufacturer *and* bookbinder, Mr. Primeau’s opinions are uniquely valuable to the present analysis, especially since Mr. Primeau has had no business dealings with either party. Regarding the importance of cooling relative to crimping, Mr. Primeau stated the following:

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<sup>1</sup> Mr. Bramon also stated that just-formed coils can not even be *put in a box* let alone inserted in the binding machine, cut, and crimped. (Bramon Depo. P.103, L.8-12)

“And there was also a crimping problem when you crimp the end of the coil and it's still hot. It has a tendency to spring back and open back, so the end product will have a coil that can be removed by the end-user and that causes quality problem.” (Primeau Depo. P. 111, L. 16-21)

Therefore, improperly cooled coil lacks uniformity when spun into a book, as some loops of the coil expand more in diameter than others – a disastrous problem for a bookbinder. In addition, improperly cooled coil does not hold its crimp, and the ends bend back to their original form due to the coil's “memory.” This is obviously unacceptable for bookbinding - if the bent edges straighten out, the coil will spin out of the book when the pages are turned. Then, there would be nothing to hold the loose pages of the book together.

### **B. The Best Mode Of The Invention Is Disclosed**

Gateway cites several additional deposition comments from Spiel Associates' President Saul Spiel to establish that the forming machine sold by Spiel includes a fan that is not identified in the subject application. Gateway then claims that Spiel failed to disclose the best mode of the invention and that the usage of a fan in the forming machine was disclaimed.

However, the forming machine's ambient air fan does not provide “forced cooling” in the manner referred to by this phrase throughout the subject application, namely the “forced cooling” of Pfaffle. The forming machine's ambient air fan provides only initial cooling within the forming machine for the purpose of setting the spiral shape of the plastic filament, by hardening the outer shell of the coil. This is because spiral coils can not be properly created within the forming machine without some form of cooling of the plastic in order to set its helical shape, namely through usage of the small fan. This was well-described by Pierre Primeau at deposition:

“Q. Do you believe -- do you think that without the fan inside the Spiel former that the cooling conveyor will cool the coil enough to be inserted into a book?

A. Well, the coil wouldn't get to the conveyor if there was not a fan because it will not be hard enough to be in shape. As soon as it left the mandrel it will be deformed so you need a blower. Every machine has a blower.” (Primeau Depo. P. 172, L.2-6)

Moreover, Gateway's Chief Engineer Walter Klassen stated in an Expert Report dated November 23, 2004 that without such cooling on the mandrel, "the forming process is not possible" (Klassen Report, P.10).

The device in question is simply an ambient air fan that has been known in the art for decades and used in all forming machines to bring the temperature of plastic coil down *somewhat* from its highest temperature prior to the coil's exit from the forming machine, at which point it is *still* too hot for immediate binding. Everyone in the industry knows this, and this is why Pfaffle attempted to utilize the vortex cooler in the late 1970's. Following Pfaffle, no one succeeded in linking the forming and binding processes for plastic spiral coil for over twenty years, until Spiel introduced its combination inline system.

Moreover, the usage of an ambient air fan was not disclaimed. The language "coil forming machine" in the application simply means a machine that forms coils. The phrase carries no requirement that any component of a typical forming machine be excluded, including the ordinary ambient air fan. All forming machines have fans, which have been known in the art for decades. What Spiel disclaims in the subject application are refrigerants and artificial cooling systems, as the application repeatedly discusses how the usage of time and ambient air allow for more reliable cooling. In fact, the inventor stated that "*rapid* cooling" would be getting coil from its forming temperature (near boiling point) to room temperature in 3-4 seconds. (N. Spiel Depo., P. 227, L.16-21)<sup>2</sup> Regarding those skilled in the art, Pierre Primeau stated: "In my opinion a *rapid* cooling system would involve having a device that will generate some **cold air** to improve the process of cooling off." (Primeau Depo, P.173, L.14-16)

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<sup>2</sup> When asked for an example of "rapid cooling" at deposition, Mr. Spiel discussed "little refrigerant blowers that had little air conditioners" that a customer had experimented with. (N. Spiel Depo., P. 208, L. 23 - P. 209, L.6)

Moreover, in an Expert Rebuttal Report dated December 14, 2004, Pierre Primeau discussed that it is not realistic to expect the ambient air fan to provide sufficient cooling, specifically stating the following:

“The coil forming process starts with a PVC filament at room temperature (between 20° C and 25° C). The coil forming process brings the filament to 100° C as fast as possible, forms it into coil shape, fixes the shape, cuts it, and cools it down. To achieve rapid heating, we need to have around 50 feet of filament go through a heater for about 30 seconds. In order to have the perfect coil, you need to have the filament back at room temperature (between 20° C and 25° C). The “forced air” device is really not a rapid cooling device, it is throwing ambient air on to the coil for less than 4 seconds. Because the filament needed more than 30 seconds to heat, even if the outside temperature of the coil is 40° C, the inside temperature is unknown and can be assumed to be somewhere between 100° C (from the heating) and 40° C (the exterior coil temperature). It can also be easily assumed that the temperature is nearer to 100° C, because it spends 30 seconds getting to that temperature” (Primeau Expert Rebuttal Report, P. 9).

Regarding Spiel’s alleged omission of the forming machine’s fan from the patent, it must be understood that Spiel does not claim to be the inventor of the forming machine – it was already patented and in use for nearly 50 years. Instead, the Spiel patents focus on combining the forming machine with a binding machine via cooling conveyor. This was a major advance in the bookbinding industry, as it saved space, saved cost, and, most of all, saved significant amounts of time over the old method of forming coils, storing them, and later feeding them manually into bookbinding machines. Because the patents cover the aspect of combining pre-existing machines, there was no need for a description of every event taking place within the previously-invented forming machine, as such has no bearing upon the patentable features of the Spiel invention. As stated in the specification, the Spiel system utilizes a “typical forming machine.” Other items such as separate drive mechanisms, coil support mechanisms, and details regarding the cutting means are also irrelevant to the Spiel patents, and therefore not discussed. Finally, even a cursory review of the Spiel patents reveals that FIGs. 22, 24, and 25 are schematics that quickly depict the forming machine in broad strokes, rather than illustrating all

of the technical features thereof. This is because such features were irrelevant. Therefore, Spiel did not fail to disclose the best mode of its combination inline system.

### **C. Additional Prior Art Cited By Gateway**

As noted previously, most of the additional prior art discussed in the Protest has already been made of record and considered by the Examiner. Nevertheless, Gateway has provided their own, often flawed, analysis of the references that Applicant refutes as discussed below.

#### **1. U.S. Patent 3,688,809, issued September 5, 1972 to Negro**

Similar to the Pfaffle '278 device, Negro discloses an integral coil forming and binding machine, but unlike Pfaffle, Negro is completely silent on the issue of heating or cooling the coils, even though synthetic material is listed as one choice for the coils. However, the first two preferred materials for the coils include metal wire and plastic coated metal wire. Importantly, metal wire, be it plastic coated or not, does not require heating or cooling, which Applicant presumes is the reason Negro is silent on the issue of heating and cooling. Therefore any mechanism in the machine that transfers coils can not be described as a cooling conveyor, as taught by the Spiel patents. To the contrary, per column 2, line 2 of Negro, the disclosure is geared towards winding wire at a faster rate than prior methods, *without* causing heat that could adversely impact the rate of production. Not surprisingly then, no form of heating or cooling is mentioned in the Negro patent precisely because such are inapplicable and even detrimental. Because there is no heat involved, cooling is anything but "inherent" as improperly argued by the Protestor. As such, the Negro device is even less relevant to the patentability of the present claims in the application than is Pfaffle '278.

## **2. EMI**

The EMI reference shows conveyors which provide cooling functions. However, although the EMI conveyor has been commercially available for over twenty years, it has never been used in the context of plastic coil bookbinding machinery. In fact, the purpose of the EMI conveyor is to take soft plastic from a mold prematurely in order to decrease the amount of time needed for the plastic to remain in the mold, thereby increasing productivity. As such, the EMI reference makes no mention of linking its conveyor with *any* future process, let alone a bookbinding machine. Further, all variations of the EMI conveyor utilizes a closed chamber with forced air which is not the same as the slow open air cooling process employed in the present invention.

## **3. U.S. Patent 3,952,540, issued April 27, 1976 to Okada**

Okada teaches conveying of hot material in a chamber with low temperature gas. The patent is cited by Gateway for its disclosure of intermittent movement of a conveyor. For the record, while intermittent movement is one feature of the preferred embodiment of the Spiel machine, by no means does Applicant suggest that an intermittently moving conveyor is novel in and of itself. It should also be noted that there are many types of conveyors used in all industries, including belt conveyors, pneumatic conveyors, and conveyors that work by gravity, and Applicant does not claim to be the inventor of conveyors in and of themselves.

## **4. U.S. Patent 4,874,279, issued October 17, 1989 to Pfaffle**

Pfaffle '279 discloses a bookbinding machine, but does not disclose a coil forming machine. Importantly, Pfaffle '279 does not indicate any motivation to combine its binding machine with a forming machine. Moreover, Pfaffle '279 does not disclose anything equivalent

to the transfer mechanism used in the subject invention. As such, the reference does not raise any patentability issues as to the present claims in the subject application.

#### **5. U.S. Patent 5,890,862, issued April 6, 1999 to Spiel**

Much like the above, Spiel '862 discloses a bookbinding machine, but does not disclose a coil forming machine. Importantly, the reference does not indicate any motivation to combine its binding machine with a forming machine. Moreover, the reference does not disclose the Spiel conveyor. As such, the reference does not raise any patentability issues as to the present claims in the subject application. In addition, this was a cited reference in the parent application that issued as the Spiel '502 patent. Thus, Applicant assumes that the Examiner already considered this reference pursuant to the provisions of MPEP Section 609.02(A)(2), which states: "The examiner will consider information which has been considered by the Office in a parent application when examining (A) a continuation application filed under 37 C.F.R 1.53(b) (B) a divisional application filed under 37 C.F.R 1.53(b) or (C) a continuation-in-part application filed under 37 C.F.R 1.53(b). A listing of the information need not be resubmitted in the continuing application unless the applicant desires the information to be printed on the patent."

#### **6. Marlon 2001**

The Marlon 2001 forming machine is the predecessor to the Marlon 700 forming machine, which is currently used by Spiel in its commercialized system. The Marlon 2001 reference discloses a coil forming machine, but does not disclose a binding machine. Importantly, Marlon 2001 does not indicate any motivation or suggestion to combine its forming machine with a binding machine. Therefore, the reference does not raise any patentability issues as to any of the pending claims in the subject application. For the record, Applicant makes no claim to having invented a coil forming machine apart from the combination thereof with a



binding machine and a transfer mechanism, such as a conveyor, to move and slowly cool the formed coils from the forming machine to the binding machine.

#### **D. Prior Art Discussed In Protest But Previously Cited By Applicant**

Gateway insists on discussing the alleged relevance of references that were already fully considered during the reexaminations of the parent patents and held by the Patent Office not to raise any substantial new questions of patentability. These references are clearly no more relevant to patentability than are the various other references of record that simply make no disclosure or suggestion of the novel nonobvious combination of elements that make up the claimed subject invention. In the decisions denying the request for reexamination, the USPTO discussed each and every reference with a specific indication of why each reference was immaterial, and stated that “The references set forth in the request have been considered both alone and in combination. They fail to raise a substantial new question of patentability as to any one of the Spiel patent claims.” Nevertheless, these other references are discussed briefly below.

##### **1. U.S. Patent 4,382,586, issued May 10, 1983 to Reese**

The Reese patent discloses a metal cooling bed for transporting metal bars, in which the rate of cooling of the bars is controlled to prevent the bars from being internally stressed. More particularly, the rate of cooling is either accelerated or retarded as desired, by using either a cooling *water panel* or an *insulated* heat barrier adjacent the cooling bed. The specific application of the invention is to controlled cooling of metal bars to avoid exposure of the bars to ambient temperature cooling, which could cause internal stresses therein.

The key to the invention claimed in the Spiel patents is that the coils are slowly cooled during transport from the forming machine to the binding machine, so that the coils arrive at the binding machine at a temperature that is sufficient to allow them to be properly processed in the

binding machine without deforming or breaking, for example. Reese has nothing to do with the specific problems of cooling plastic spiral binding coils as they are transported between a forming machine and a binding machine. Reese actually teaches away from the Spiel invention by specifying that the metal bars should not be exposed to ambient air cooling, for to do so, would impart internal stresses to the bars. Reese is less relevant than Pfaffle '278 as Pfaffle '278 discloses controlled cooling of a plastic spiral binding coil, while Reese discloses controlled cooling of a totally unrelated element, a cast metal bar.

### **2. U.S. Patent No. 3,944,049, issued March 16, 1976 to Graybill**

Graybill discloses a conveyor system for conveying *pies* from an oven to a pie wrapping machine, wherein the pies are transported on multiple conveyors and the speed of a conveyor is adjustable, not to assure attainment of a particular cooled temperature of the pies, but rather to assure a proper backlog of the pies on an accumulator conveyor. Graybill is irrelevant in that it discloses the concept of adjusting a conveyor for pies based not on some desirable end state of the pie, but based on how many pies are on an accumulating conveyor. As such, the Graybill reference represents completely non-analogous art to the Spiel invention.

### **3. U.S. Patent No. 6,000,897, issued December 14, 1999 to DesJarlais**

This patent discloses a machine for automatic coil insertion into sheets of paper for binding. DesJarlais makes no mention of coil forming or cooling, and is thus immaterial. Further, the patent does not mention any type of conveyor or other means for delivering the coils to the insertion machine. As such, the DesJarlais reference represents precisely what the Spiel invention replaced in the industry – old binding machines that utilized hand-fed coils that had been formed and stored weeks beforehand or longer.

**4. Operator's Manual for Renz Automatic Plastic Spiral Winding and Length Cutting Machine, Published July 2, 1990**

The operator's manual for the Renz spiral winding and length cutting machine discloses a machine for forming and cutting spiral elements. The machine forms spiral elements on a heating and winding system, and includes a cutting system which cuts the spiral elements to length. The plastic filament is first heated by a heating system using a heating drum. A winding mandrel is employed and is partially cooled by air from a ventilator. The spiral elements are ejected from the machine, and in section 3.2.4 on page 2, it is stated that the spiral elements are delivered to a table, which is not included with the machine. Specifically, the Renz reference states: "After turning 60 degrees, it delivers the spiral to a table (which is not included in our delivery)." Thus, Gateway's statement in the Protest that "there is no description of the element onto which the spiral elements are discharged" is a complete falsehood. Renz makes no mention of any degree of cooling following discharge of coils from the machine.

**VII. Summary of the Patentability of the Claimed Invention**

It is well established that a rejection of a claim as being unpatentable under 35 U.S.C. 103 can be overcome based on lack of motivation to combine the references absent the impermissible use of hindsight, absence of a prima facie case of obviousness (the combination even if proper, does not disclose all of the claim elements), and through a showing of unexpected results even where a prima facie case of obviousness is established. Applicant respectfully submits that at least two of these factors are present here.

The most relevant prior art among all of the references of record remains Pfaffle '278, which is the only reference that is specifically directed toward a machine which heats, forms, cools and cuts plastic coils and then inserts the coils into a book binding. However, any attempt to combine the teachings of Pfaffle '278 with any of the other references of record that disclose

other types of conveyors, be they for cooling or not, fails immediately because of a distinct lack of motivation to combine the teachings of Pfaffle '278 with these other references, absent the impermissible use of hindsight through reference to Applicant's own disclosure. Pfaffle's integral compact design clearly teaches away from the notion of using separate forming and binding machines with a transfer mechanism, such as a conveyor, that is specifically designed to cool the coils at a particular rate and for a sufficient duration of time that the coils can be readily processed by the binding machine without deforming or breaking. No single reference has been located that identifies the specific plastic binding coil cooling problem addressed by the claimed invention. As a result, one of ordinary skill in the art having only the teachings of Pfaffle and the other references now of record before them, would not be motivated to combine these teachings since there would be no apparent reason to do so absent knowledge of Applicant's own disclosure.

Further, even if the references could be combined to establish a prima facie case of obviousness under 35 U.S.C. 103, Applicant respectfully submits that such a case could be overcome by the unexpected beneficial results provided by the claimed invention. In particular, the specific use of slow cooling of plastic spiral coils until they are cool enough to allow proper processing by the binding machine provides the beneficial results of avoiding the control problems associated with the vortex cooling of the Pfaffle device which was problematic and unreliable.

In view of the foregoing, Applicant respectfully submits that all of the new claims are patentable and allowable over all of the references now of record. Accordingly, favorable reconsideration and allowance of the application are respectfully requested.

Respectfully submitted,

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